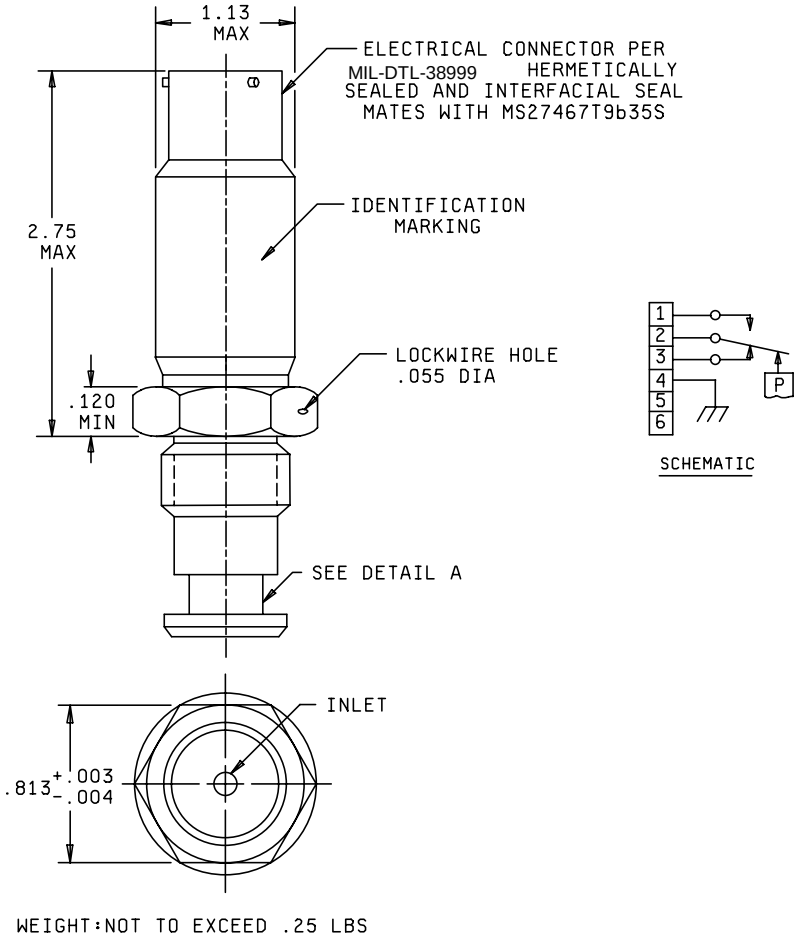
DETAIL SPECIFICATION SHEET

SWITCHES, PRESSURE, GAUGE (TYPE II), LOW LEVEL TO 1 AMPERE

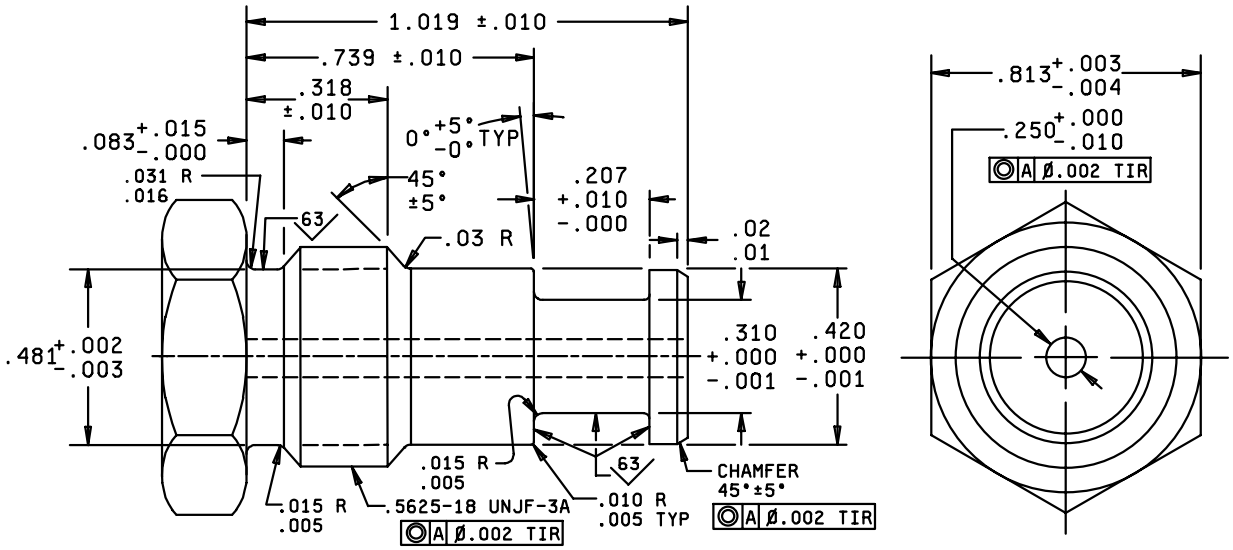
This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the pressure switches described herein shall consist of this specification and the latest issue of MIL-DTL-9395.



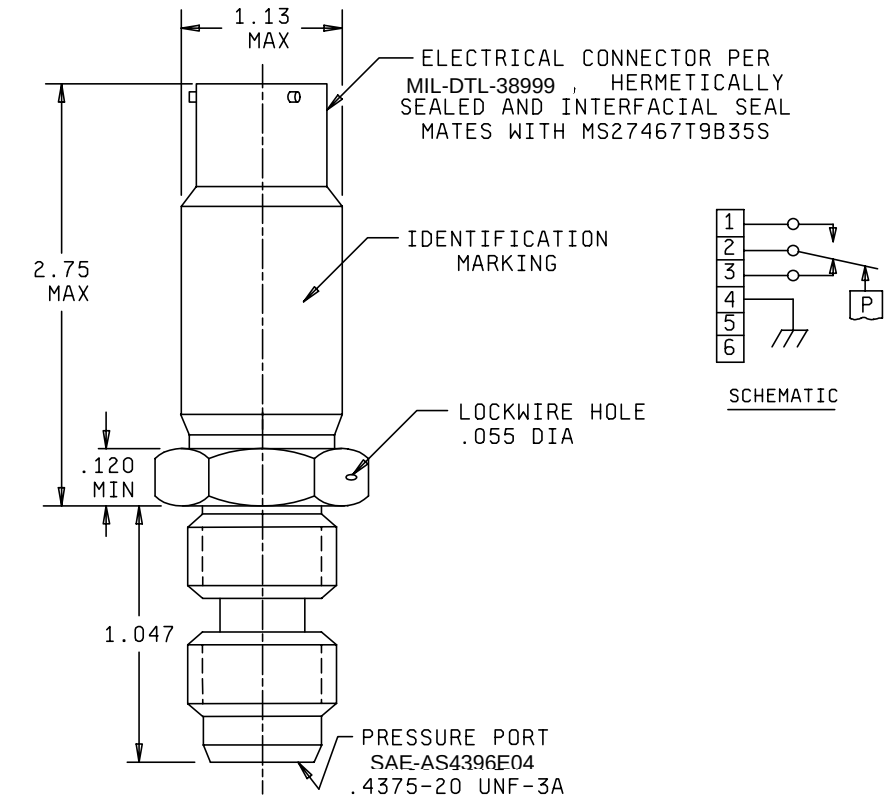
CONFIGURATION 1

FIGURE 1. Switches.



DETAIL A

FIGURE 1. Switches - Continued.



WEIGHT: NOT TO EXCEED .25 POUNDS

Inches	mm	Inches	mm	Inches	mm
.001	0.03	.03	0.8	.420	10.67
.002	0.05	.031	0.79	.481	12.22
.003	0.08	.055	1.40	.688	17.47
.004	0.10	.083	2.11	.739	18.77
.005	0.13	.120	3.05	1.019	25.88
.010	0.25	.207	5.26	1.047	26.59
.015	0.38	.250	6.35	1.13	28.7
.016	0.41	.310	7.87	2.75	69.8
.02	0.5	.318	8.08		

CONFIGURATION 2

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Exact shape of switch is optional provided outline dimensions specified are not exceeded and connector location area is as specified.
4. Schematic shown is for switches with pressure ports exposed to zero pound-force per square inch.
5. Packing groove in accordance with MIL-G-5514.
6. Surface finish 125 roughness height reference, except where otherwise specified.
7. Surface finish in accordance with ANSI B 46.1.

FIGURE 1. Switches - Continued.

REQUIREMENTS:

Dimensions, configuration, and electrical schematic: See figure 1.

Weight: See figure 1.

Calibration: See tables I, II, III, IV, and IV.

Tolerance and maximum differential: See table I.

System pressure: 180 lb_f/in^2.

Proof pressure: 270 lb_f/in^2.

Burst pressure: 800 lb_f/in^2.

Electrical ratings:

Resistive: 1 ampere at 28 V dc.

Minimum current: 25,000 cycles.

Low level: 50,000 cycles

NOTE: Switches shall be subjected only to low level loads prior to delivery.

Seal:

Electrical chamber: Hermetic.

Pressure chamber: Hermetic.

Reference chamber: Unsealed.

Electrical connector: See figure 1.

Pressure port: See figure 1.

Media: Dry air, nitrogen, oxygen, Coolanol 25R, or equal.

High temperature (operating and nonoperating): B (+275°F).

Low temperature (operating and nonoperating): D (-65°F).

Altitude: C (70,000 feet).

Shock: C (100 G).

Vibration: S (test condition D, method 204 of MIL-STD-202), except 10 to 2,000 Hz, 20 G).

Supplemental nonoperating sinusoidal vibration:

Sweep time: 15 minutes.

Frequency range and amplitude: 50 through 81 Hz, .036 inch double amplitude; 81 through 210 Hz ±12 g; 210 through 298 Hz, .0053 inch double amplitude. 298 through 500 Hz, ±24 g.

Test duration: 15 minutes in each of three mutually perpendicular planes.

Life (mechanical): A (100,000 cycles).

Life (electrical): C (50,000 cycles).

Acceleration: C (8 g).

Pulsation amplitude: A (0 percent).

Pulsation frequency: A (0 Hz).

Pressure rise: A (less than 100 lb_f/in^2).

Dielectric withstanding voltage (at reduced barometric pressure): Applicable at 350 V rms.

Connector torque:

Electrical connector: 8 foot-pounds.

Pressure port mounting torque: 15 foot-pounds.

Flame test: Applicable.

Explosion: Applicable.

QUALIFICATION:

Single submission: Restricted to switch submitted.

Group submission: See table V.

PART NUMBER: Consists of M prefix followed by specification sheet number; a dash (-); and a five-letter code. The five-letter identifies the configuration and pressure setting mode (code from table I); high-pressure setting (coarse value code from table II) followed by fine value with applicable tolerance (code from table III); and low-pressure setting (coarse value code from table II) followed by fine value with applicable tolerance (code from table III). The five-letter code used in the following example identifies a switch of configuration 1 which actuates on increasing pressure at 1.5 $\pm$.5 lb_f/in^2 and deactuates on decreasing pressure at .5 $\pm$.5 lb_f/in^2.

EXAMPLE:

M9395/41- A AJ AG

M prefix and specification sheet number

Configuration and pressure setting mode = code A of table I.

High-pressure setting = code A of table II (coarse value of 0 lb_f/in^2 and code J of table III (fine value of 1.5 $\pm$.5 lb_f/in^2).

Low-pressure setting = code A of table II (coarse value of 0 lb_f/in^2 and code G of table III (fine value of .5 $\pm$.5 lb_f/in^2).

NOTE: Design limitations (actuation values and tolerances, deabband and deactuation values and tolerances) should be coordinated with manufacturer(s) listed on the QPL for this specification sheet before specifying a particular M number. The fact that operating characteristics can be coded does not necessarily mean that it can be manufactured or acquired.

TABLE I. Codes for combinations of configurations and pressure setting modes.

Code	Configuration		Pressure setting mode	
	1	2	High setting	Low setting
	A	D	At (or max) 1/	At (or min) 1/
	B	E	At (or max) 1/	Differential 2/
	C	F	Differential 2/	At (or min) 1/

1/ Setting values are designated by characters from tables II and III.
2/ Setting values are designated by characters from table IV.

TABLE II. Codes for coarse pressure settings.

Code	Coarse value (lb_f/in^2)	Code	Coarse value (lb_f/in^2)	Code	Coarse value (lb_f/in^2)
A	0	L	30	W	80
B	2.5	M	35	X	85
C	5	N	40	Y	90
D	7.5	P	45	Z	95
E	10	Q	50	1	100
F	12.5	R	55	2	105
G	15	S	60	3	110
H	17.5	T	65	4	115
J	20	U	70	5	120
K	25	V	75	6	125

TABLE III. Codes for combinations of fine settings and tolerance values.

Code	Fine value for settings below 20 lb_f/in^2					Tolerance (lb_f/in^2)
	0	.5	1	1.5	2	
	A	B	C	D	E	±0.25
	F	G	H	J	K	±0.5
	L	M	N	P	Q	±1.0
	R	S	T	U	V	±1.5
	W	X	Y	Z	1	±2.0
	2	3	4	5	6	±2.5
	7	8	9	0	-	Min or Max
	Fine value for settings of 20 lb_f/in^2 and above					Tolerance (lb_f/in^2)
	0	1	2	3	4	
	A	B	C	D	E	±1.0 1/
	F	G	H	J	K	±2.0 2/
	L	M	N	P	Q	±3.0 3/
	R	S	T	U	V	±4.0
	W	X	Y	Z	1	±5.0
	2	3	4	5	6	±6.0
	7	8	9	0	-	Min or Max

1/ Not applicable for pressure settings above 33 lb_f/in^2.
2/ Not applicable for pressure settings above 66 lb_f/in^2.
3/ Not applicable for pressure settings above 100 lb_f/in^2.

TABLE IV. Codes for differential settings. 1/

Code	Differential value (lb_f/in^2)	Code	Differential value (lb_f/in^2)
A	0	T	11
B	0.5	U	12
C	1	V	13
D	1.5	W	14
E	2	X	15
F	2.5	Y	16
G	3	Z	18
H	3.5	1	20
J	4	2	22
K	4.5	3	24
L	5	4	26
M	5.5	5	28
N	6	6	30
P	7	7	35
Q	8	8	40
R	9	9	45
S	10	0	50

1/ Differential settings require two codes, minimum differential and maximum differential.

TABLE V. Extent of qualification.

Part number	Number of samples required	Tests	Qualifies
M9395/41-AAJAG M9395/41-AAJAG M9395/41-A6R3W M9395/41-A6R3W	2 each resistive 2 each intermediate current 2 each low level 2 each resistive	Complete per qualification inspection of MIL-DTL-9395	All
M9395/41-DAJAG	2 each	Visual and mechanical examination	

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Review activities:
Army - AV
Navy - MC, SH
Air Force - 99

Preparing activity:
DLA - CC

(Project 5930-1730-17)